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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,056	01/16/2004	Hidetoshi Juryozawa	3339.12US02	8491

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EXAMINER

LARKIN, DANIEL SEAN

ART UNIT PAPER NUMBER

2856

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,056

Applicant(s)

JURYOZAWA ET AL.

Examiner

Daniel S. Larkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 16 January 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election without traverse of Group II, claims 3-11, in the reply filed on 12 August 2004 is acknowledged. Cancellation of claims 1 and 2 in the response filed 12 August 2004 is also acknowledged.

Priority

2. Receipt is acknowledged of a certified copy of the Japanese applications referred to in the oath or declaration or in an application data sheet. If this copy is being filed to obtain the benefits of the foreign filing date under 35 U.S.C. 119(a)-(d), applicant should also file a claim for such priority as required by 35 U.S.C. 119(b). If the application being examined is an original application filed under 35 U.S.C. 111(a) (other than a design application) on or after November 29, 2000, the claim for priority must be presented during the pendency of the application, and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior foreign application. See 37 CFR 1.55(a)(1)(i). If the application being examined has entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the claim for priority must be made during the pendency of the application and within the time limit set forth in the PCT and Regulations of the PCT. See 37 CFR 1.55(a)(1)(ii). Any claim for priority under 35 U.S.C. 119(a)-(d) or (f) or 365(a) or (b) not presented within the time period set forth in 37 CFR 1.55(a)(1) is considered to have been waived. If a claim for foreign

priority is presented after the time period set forth in 37 CFR 1.55(a)(1), the claim may be accepted if the claim properly identifies the prior foreign application and is accompanied by a grantable petition to accept an unintentionally delayed claim for priority. See 37 CFR 1.55(c).

The examiner is unclear if priority to the Japanese applications is being sought. Applicants filed an unexecuted declaration in the parent application, 10/108,770, as well as priority documents when the application was originally filed on 28 March 2002. Subsequently, the applicants submitted a supplemental declaration on 10 May 2002 and checked the boxes that "Priority Not Claimed". This application, 10/760,056, claims the benefit of application 10/108,770. Additionally, applicants filed the executed declaration from the parent application in which the boxes "Priority Not Claimed" were checked. Some clarification of this matter is needed.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "means for measuring an amount of carbon in the carbon concentration measuring body", as recited in claims 3 and 8, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

Page 1, line 6: The phrase --, now U.S. Patent No. 6,709,629 -- should be inserted after the date "2002".

Page 3, line 17: The article -- a -- should be inserted after the term "Still".

Page 3, line 18: The term "comprises" should be corrected to read -- comprising --.

Page 3, line 20: The article --a -- should be inserted after the term "Yet".

Page 3, line 21: The term "comprises" should be corrected to read

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-- comprising --.

Page 4, line 1: The article -- a -- should be inserted after the term "Yet".

Page 4, line 2: The term "comprises" should be corrected to read

-- comprising --.

Page 4, line 12: The article -- a -- should be inserted after the term "Yet".

Page 4, line 16: The article -- a -- should be inserted after the term "Still".

Page 5, line 3: The article -- a -- should be inserted after the term "Yet".

Page 6, line 15: The abbreviation "Fig." should be corrected to read -- FIG. --, in order to maintain consistency in the style used in the drawing figures and the Brief Description of the Drawing Figures section of the specification.

Page 7, line 7: The symbol "N2" should be corrected to read -- N₂ --.

Page 7, line 12: The article "a" prior to the term "maintenance" should be deleted.

Page 7, line 24: The article "The" should be deleted; and the term "high" should be corrected to read -- High --.

Page 8, line 8: The term "of" should be deleted.

Page 8, line 19: The symbol "N2" should be corrected to read -- N₂ --.

Page 9, lines 3, 7, 12, 17, and 19: The symbol "N2" should be corrected to read -- N₂ --.

Page 9, lines 11, 13, 16, and 18: The abbreviation "Fig." should be corrected to read -- FIG. --.

Page 9, line 12: A space should be inserted between the term "atmosphere" and "(0.1 MPa)".

Page 10, line 12: The abbreviation "Figs." should be corrected to read -- FIGS. --.

Page 11, line 4: The term "with" should be deleted.

Page 11, line 13: The term "at" should be replaced with the term -- by --.

Page 11, line 14: The term "at" should be replaced with the term -- by --.

Page 11, lines 14 and 18: The abbreviation "Figs." should be corrected to read -- FIGS. --.

Page 11, line 15: The term "at" should be replaced with the term -- by --.

Page 12, line 5: The abbreviation "Fig." should be corrected to read -- FIG. --.

Page 12, line 12: The article "the" prior to the term "atmospheric" should be deleted.

Page 12, line 18: The first occurrence of the term "exhaust" should be corrected to read -- exhausted --.

Page 13, line 8: The article "a" should be deleted.

Page 13, line 9: The article "the" prior to the term "atmospheric" should be deleted.

Page 13, line 17: The abbreviation "Fig." should be corrected to read -- FIG. --.
Appropriate correction is required.

Claim Objections

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6. Claims 3-11 are objected to because of the following informalities:

Re claim 3, claim line 2: A -- colon -- should be inserted after the term "comprising".

Re claim 7, claim line 2: The article -- the -- should be inserted prior to the term "means".

Re claim 8, claim line 2: A -- colon -- should be inserted after the term "of".

Re claim 8, claim line 14: The article "a" prior to the term "room" should be deleted.

Re claim 8, claim line 16: The article "the" prior to the term "atmospheric" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claims 8-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 8, claim lines 10 and 11: The phrase "gradually cooling for a predetermined period of time" is a relative phrase which renders the claim indefinite. The terms "gradually" and the "period of timer" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The claim fails to provide incite as to how gradual a cooling is required and how long this cooling is undertaken.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 4, 6, 8, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,817,084 (Whitehead) in view of JP 45-35411 (Toyota).

The reference to Whitehead discloses an apparatus for inserting and removing specimens from high temperature vacuum furnaces comprising: a carbon concentration measuring body insertion port (14, 28, 42) communicating between an external portion of a furnace shell of a heat treatment furnace (4) and a treating room (8) within the furnace shell; means for exhausting (30, 34) an internal portion of the port (14, 28, 42); means for maintaining a vacuum seal (16) of a portion of the port outside of the furnace shell; and means for transferring a carbon concentration measuring body (44, 46, 48, 58) from the external portion of the furnace shell into the treating room (8). The reference to Whitehead fails to disclose means for measuring an amount of carbon in the carbon concentration measuring body.

The reference to Toyota discloses the placement of a test piece in a furnace atmosphere; reacting the material; and determining the furnace atmosphere composition based on the carbon content of the test piece depending on the electro-resistance of the test piece. Determining the carbon composition of the furnace atmosphere would have been obvious to one of ordinary skill in the art as a means of

insuring that the furnace atmosphere is proper for the specific steel heat treatment conditions necessary for treating steel that is good quality.

With respect to the limitation of claim 4, the reference to Whitehead fails to explicitly recite that the material placed within the furnace is a steel wire. The reference to Toyota discloses the placement of a steel wire within the atmosphere of a furnace. Using a steel wire would have been obvious given that the steel wire's resistance is related to the carbon content of the furnace's atmosphere, as well as providing a means of measuring a rate of affection of the atmosphere.

With respect to the limitation of claim 6, the reference to Whitehead discloses that a material to be carburized is placed within the sample tray (46).

With respect to the limitations of claim 8, the reference to Whitehead discloses an apparatus and method for inserting and removing specimens from high temperature vacuum furnaces comprising: exhausting an internal portion of a carbon concentration measuring body insertion port between an external portion of a furnace shell of a heat treatment furnace (4) and a treating room (8) within the furnace shell (col. 3, lines 47-54); transferring a carbon concentration measuring body from a portion of the port outside of the furnace shell into the treating room (8) (col. 3, lines 54-58); reacting the carbon concentration measuring body with the atmosphere in the treating room for a predetermined period of time (col. 3, lines 59-63); gradually cooling the measuring body for a predetermined period of time, as taught in the prior art (col. 4, lines 47-50); and drawing out the measuring body to the portion of the port outside of the furnace shell, and cooling the measuring body to room temperature (col. 3, line 67). The reference to

Whitehead fails to teach measuring an amount of carbon in the carbon concentration measuring body.

The reference to Toyota discloses the placement of a test piece in a furnace atmosphere; reacting the material; and determining the furnace atmosphere composition based on the carbon content of the test piece depending on the electro-resistance of the test piece. Determining the carbon composition of the furnace atmosphere would have been obvious to one of ordinary skill in the art as a means of insuring that the furnace atmosphere is proper for the specific steel heat treatment conditions necessary for treating steel that is good quality.

With respect to the limitation of claim 9, the reference to Whitehead fails to explicitly recite that the material placed within the furnace is a steel wire. The reference to Toyota discloses the placement of a steel wire within the atmosphere of a furnace. Using a steel wire would have been obvious given that the steel wire's resistance is related to the carbon content of the furnace's atmosphere.

With respect to the limitation of claim 11, the reference to Whitehead discloses that a material to be carburized is placed within the sample tray (46).

10. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,817,084 (Whitehead) in view of JP 45-35411 (Toyota) as applied to claims 3 and 8 above, and further in view of In re Leshin, 125 USPQ 416 (CCPA 1960)

With respect to the limitations of claims 5 and 10, the references to Whitehead and Toyota both teach using a material to be carburized or a steel wire placed within a

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heat treatment furnace; however, both references fail to disclose the placement of steel foil within a heat treatment furnace. The decision rendered in In re Leshin disclosed that mere selection of known materials to make a product of a type made of known materials prior to the invention, the selection of the material being on the basis of suitability for the intended use, would be entirely obvious. Therefore, since it is known to carburize steel wire, the use of steel foil for the same purpose would be obvious. Using a piece of steel foil would have been obvious to one of ordinary skill in the art because steel foil would present a better material to be carburized because the heat would be able to contact more surface area than a piece of wire or another general shape.

Allowable Subject Matter

11. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claim 7 because the prior art fails to teach and/or make obvious providing means for maintaining a vacuum seal of a port which also functions as a means for fastening and holding a carbon concentration measuring body transferring means in combination with all of the remaining limitations of claim 7 and all of the limitations of independent claim 3.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

The prior art to US 5,114,635 (Sohda et al.) discloses a process for producing carbon material and carbon/carbon composites comprising wrapping a pitch material within stainless steel foil and placing the package in a heat treatment furnace to carburize the package, as taught in Examples 4, 6, 9, 12.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
28 October 2004



DANIEL S. LARKIN
PRIMARY EXAMINER